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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,773	06/10/2005	Giuseppe Donato	40376/GM/lp	3740

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MILAN, 20123
ITALY

EXAMINER

TORRENTE, RICHARD T

ART UNIT	PAPER NUMBER
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2621

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/538,773	Applicant(s) DONATO, GIUSEPPE	
	Examiner RICHARD TORRENTE	Art Unit 2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 24 and 27-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 24 and 27-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claim(s) 24, 27-46 is/are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claim 24 recites the limitation "said coupling elements" in lines 13-14. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
5. Claims 24, 27-39, 43 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Zhang (US 6,456,261) in view of Walker (US 6,121,953).

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Regarding claim 24, Zhang discloses a helmet for displaying environmental images in critical environments (see abstract), comprising at least one video camera (see fig. 6) and means for displaying environmental images (see 70 in fig. 3), further comprising a supporting structure (see fig. 4) that can be anchored to said helmet in order to support said at least one video camera and said display means (e.g. see fig. 5 attachment to fig. 4), said supporting structure comprising a front adapter (see keeper in fig. 4) that can be coupled to a front edge of said helmet, a rear adapter (see column 5, lines 31-38) that can be coupled to a rear edge of said helmet; further discloses comprising a frame that is mounted detachably on said front adapter (e.g. see "spring loaded mount" in fig. 5), said frame comprising means for supporting said video camera and means for supporting said display means (see "spring loaded mount" in fig. 5 attaching with fig. 3), wherein said frame comprises a bridge-like structure (see "spring loaded mount" bridging with the camera in fig. 5) that mutually connects elements for coupling to said front adapter, said coupling elements being arranged on opposite ends of said bridge-like structure (see fig. 3 and fig. 5; wherein elements are arranged on the left and right front end of the frame).

Although Zhang discloses a connecting element (see strap in fig. 4) for mutually connecting said front adapter and said rear adapter, it is noted that Zhang does not disclose wherein the connecting element is rigid.

However, Walker, in the same field of endeavor, discloses a headgear wherein the connecting elements is rigid (see 14 in fig. 2; see column 3, lines 53-56).

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Given the teachings as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Walker teachings of adjustable rigid head mount into Zhang head mount for the benefit of quickly and easily adjusting tightness.

Regarding claim 27, Zhang further discloses wherein said means for supporting said at least one video camera are fixed to said bridge-like structure and comprise at least one mechanical connector for fixing said video camera to said supporting structure (see fig. 5) and a power supply connector for connecting said video camera to a power supply (see fig. 4).

Regarding claim 28, Zhang further discloses wherein said power supply comprises a battery that is mounted monolithically with said rear adapter and comprises a cable for the connection to said power supply connector of said supporting means (see fig. 4).

Regarding claim 29, Zhang further discloses wherein said front adapter protrudes with respect to said helmet substantially at right angles to the front part of said helmet, forming a peak, said peak comprising an edge and said coupling elements comprising hooks for coupling to said edge (e.g. see fig. 6).

Regarding claim 30, Zhang further discloses wherein said hooks form a guide for the sliding insertion of said peak in said frame, said hooks having a substantially straight longitudinal extension (see fig. 5).

Regarding claim 31, Zhang further discloses wherein said coupling elements comprise a respective pivot on which said display means are fixed so that they can rotate (see fig. 5).

Regarding claim 32, Zhang further discloses wherein said display means comprise at least one display (see 70 in fig. 3).

Regarding claim 33, Zhang further discloses wherein said display comprises opposite side walls in which there is a respective guide, each pivot of said coupling elements being engaged with the respective guide of said side walls in order to allow a combined rotary and translational motion of said display with respect to said helmet (see fig. 5).

Regarding claim 34, Zhang further discloses wherein said front adapter and said rear adapter comprise respective undercuts whose profile is complementary to said front edge and to said rear edge respectively (see fig. 4).

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Regarding claim 35, Zhang further discloses comprising means for radio communication (see "transceiver" in fig. 1) of environmental images, said image communication means being connected electronically to said at least one video camera and/or to said means for displaying environmental images, in order to transmit remotely environmental images acquired by said video camera and/or display on said display means environmental images acquired by a remote video camera (see fig. 1).

Regarding claim 36, Zhang further discloses wherein said means for radio communication are mounted detachably on said rear adapter (see fig. 2).

Regarding claim 37 and 38, although Zhang discloses a display control circuit is mounted detachably on said rear adapter (see fig. 1), It is noted that Zhang does not disclose for the display control to include a PIP display.

Although it is not explicitly recited, it is conventional in the art for a PIP display. The Examiner takes official notice that the PIP circuit is well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the PIP technology into Zhang display system for the benefit of viewing multiple videos simultaneously.

Regarding claim 39, Zhang further discloses wherein said means for communicating environmental images comprise at least one transmitter for transmitting by radio at least one video signal of a respective video camera over a respective

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communication channel and at least one receiver for receiving by radio at least one video signal on a second communication channel (see fig. 2).

Regarding claim 43, Zhang further discloses wherein said display means comprise a display chosen from the group that comprises liquid-crystal displays (see "LCD" in fig. 3).

Regarding claim 46, Zhang further discloses comprising means for digital recording of the acquired environmental images (see 154 in fig. 13), said recorder being mounted detachably on said rear adapter.

6. Claims 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang (US 6,456,261) in view of Walker (US 6,121,953), and further in view of Tandler et al. (US 5,835,264).

Regarding claims 40-42, although Zhang discloses comprising means for deflecting (see column 1, lines 55-57) the environmental image that are mounted upstream of said at least one video camera, wherein deflection means comprising a mirror (see column 1, lines 55-57), it is noted that Zhang and Walker does not discloses said deflection means comprising motorized means and said motorized means upstream of said at least one video camera in order to reflect the environmental image

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onto said at least one video camera according to multiple angles and accordingly widen the viewing field; wherein said motorized means comprise a galvanometer in order to make said mirror oscillate between two extreme positions, said environmental image deflection means furthermore comprising a shutter that is mounted between said mirror and said at least one video camera, in order to acquire the environmental image at said extreme positions; further comprising stereoscopic vision means, said stereoscopic vision means and said image deflection means being mounted on different planes, said stereoscopic vision means comprising two eyepieces, each eyepiece being coupled to a reflecting means that is orientated so as to reflect the environmental image onto said mirror mounted on said motorized means.

However, Tandler discloses a viewing system wherein said deflection means comprising motorized means (see “galvanometer” in column 9, lines 9-11) and said motorized means upstream of said at least one video camera in order to reflect the environmental image onto said at least one video camera according to multiple angles and accordingly widen the viewing field (e.g. see fig. 13). wherein said motorized means comprise a galvanometer (see “galvanometer” in column 9, lines 9-11) in order to make said mirror oscillate between two extreme positions, said environmental image deflection means furthermore comprising a shutter (see column 6, lines 26-27) that is mounted between said mirror and said at least one video camera, in order to acquire the environmental image at said extreme positions; further comprising stereoscopic vision means (e.g. see fig. 13), said stereoscopic vision means and said image deflection means being mounted on different planes, said stereoscopic vision means

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comprising two eyepieces (e.g. see fig. 14), each eyepiece being coupled to a reflecting means that is orientated so as to reflect the environmental image onto said mirror mounted on said motorized means (e.g. see fig. 15).

Given the teachings as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Tandler teachings of stereoscopic display into Zhang and Walker display as an upgrade for the benefit of stereoscopic viewing with little additional complexity and use of space.

7. Claims 44 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang (US 6,456,261) in view of Walker (US 6,121,953), and further in view of Pavlidis et al. (US 2003/0053664).

Regarding claims 44 and 45, Although Zhang discloses comprising a plurality of video cameras and selected from the group that comprises video cameras of the thermographic type that operate in the infrared spectral domain (see “infrared camera” in fig. 2), it is noted that Zhang and Walker does not disclose wherein the cameras are arranged along mutually perpendicular planes, and comprising splitter laminas in order to divide the acquired environmental images into their various spectral components and direct them toward said plurality of video cameras.

However, Pavlidis discloses an infrared system wherein a plurality of video cameras arranged along mutually perpendicular planes (see 60 in fig. 4), and

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comprising splitter laminas (see P [0073]) in order to divide the acquired environmental images into their various spectral components and direct them toward said plurality of video cameras (see 12 in fig. 4),

Given the teachings as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Pavlidis teachings of perpendicular cameras into Zhang and Walker cameras as an upgrade for the benefit of improved imaging under challenging environmental and lighting conditions.

Response to Arguments

8. Applicant's arguments filed 2/26/10 have been fully considered but they are not persuasive.

Applicant argued that Zhang does not disclose a bridge-like structure that mutually connects elements for coupling to said front adapter, said coupling elements being arranged on opposite ends of said bridge-like structure. The Examiner disagrees. The claim did not define what a "bridge-like structure" is, and did not clearly define "opposite ends", thus the Examiner interpreted the "bridge-like structure" as a bridging structure connecting elements, and "opposite ends" as the left end and right end of the front of the frame. Therefore, Zhang disclose a bridge-like structure (see "spring-loaded mount" in fig. 5) that mutually connects elements for coupling to said front adapter, said coupling elements being arranged on opposite ends of said bridge-like structure (see fig. 3 and fig. 5; wherein the camera, LCD, plastic cover, etc. elements are arranged on

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the left and right front end of the frame). Thus, the Examiner maintains all limitations are met.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RICHARD TORRENTE whose telephone number is (571) 270-3702. The examiner can normally be reached on M-F: 7:30 - 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on (571) 272-7418. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Richard Torrente/
Examiner, Art Unit 2621

/Young Lee/
Primary Examiner, Art Unit 2621

RT